The Dietary Quality of Persons with Heart Failure in NHANES 1999-2006

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The Dietary Quality of Persons with Heart Failure in NHANES 1999-2006

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• To describe the dietary quality and achievement of recommended dietary goals and assess correlates of goal achievement in a national sample of persons with heart failure

Rationale
• Heart failure is associated with considerable morbidity and mortality in the U.S.
• American College of Cardiology/American Heart Association (ACC/AHA) guidelines recommend the following dietary guidelines for persons with non-end-stage heart failure
  ▪ Restricted sodium intake
  ▪ Adherence to dietary guidelines for underlying and comorbid conditions, including coronary heart disease, hypertension, hypercholesterolemia, and diabetes
• However, there is little understanding of the current dietary quality of persons with heart failure

Objective

Methods

Data Source
• NHANES is a series of cross-sectional studies conducted by the CDC to provide health information representative of the civilian population
• Uses multistage, stratified sampling design to ensure adequate population representation
• Data from 1999-2000, 2001-2002, 2003-2004, 2005-2006 cycles were used

Target Population
• Adults 50 years and over
• Self-reported ever being diagnosed with heart failure by a health care provider
• Included 524 persons (6.5% of persons age 50+)

Dietary Assessments
• Single 24 hour recall administered at mobile exam center
• Used Food Intake Analysis System (FIAS)
• Goals defined using:
  ▪ ACC/AHA heart failure guidelines
  ▪ AHA dietary guidelines for CVD
  ▪ Dietary guidelines for Americans

Covariates
• Demographic factors: Age, gender, race/ethnicity, education income level
• Risk factors: Body mass index (BMI), smoking status
• Medical conditions: Provider diagnosis of coronary heart disease, hypertension, hypercholesterolemia and diabetes, years since HF diagnosis

Statistical Analysis
• Weighted to general U.S. population age 50+ with heart failure
• Descriptive statistics of population and dietary components
• Principal component analysis using orthomax rotation to describe patterns of dietary goal adherence
• Multivariate Poisson regression model to determine association of covariates with number of dietary goals achieved

Results

Dietary Goals

Multivariate Poisson Model Predicting Number of Goals Met

Implications and Limitations

• Study limitations include self-reported heart failure diagnosis and diet and cross-sectional design
• Dietary quality of persons with heart failure is poor, with persons of lower education, overweight and obese persons and smokers at greatest risk
• Poor diet places persons with heart failure at risk for greater symptoms, poorer quality of life, worsening comorbidities and greater mortality rates
• Behavioral scientists and clinicians are challenged to develop appropriate dietary interventions targeted for this population

Percent of Population

Age 70+
Female
Non-white
< HS degree
< $25 K/year
Smoker
BMI 25+

Number of Dietary Goals Met

0-1
2
3
4+

Dietary Component
Sodium
Saturated fat
Fiber
Cholesterol
Protein
Calcium
Magnesium

Daily Goal
< 2000 mg
< 7% total energy
>> 30 gm
< 200 mg
0.8 gm/kg ideal body weight
>> 1200 mg
>> 420 mg men
>> 320 mg women

Mean (SE)
2,716 (94)
11.3 (1)
14 (4)
262 (12)
1.1 (0.03)
706 (21)
270 (9)

Met Goal
34%
13%
4%
53%
68%
13%
10%

Factor 1
.63
.65
-.79
.65
-.77
-.42
-.84

Factor 2

MULTIVARIATE POISSON MODEL
PREDICTING NUMBER OF GOALS MET

IRR (95% CI)

Education
< HS degree Referent
HS degree 1.19 (1.05-1.35)
> HS degree 1.16 (1.02-1.32)
BMI (per unit) .990 (.982-.997)
Current smoker
No Referent
Yes .90 (.79-1.00)

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